

REMARKS

Claims 1-41 are pending and are rejected. Claims 1-21 and 24-41 are rejected. Claims 22 and 23 are objected to. Claims 21 and 31 are amended. Reconsideration and allowance of Claims 1-41 are respectfully requested.

Allowable Subject Matter

Claims 22 and 23 are objected to as being dependent upon a rejected base claim but would be allowable if re-written in independent form including all of the limitations of the rejected base claim and any intervening claims. Applicant thanks the Examiner for the indication of allowable subject matter.

Claim Rejections under 35 USC §102

Claims 1-2, 4-21, 24-34, 36, and 40-41 are rejected under 35 USC §102(b) as being anticipated by Nataraj (US Pub. No. 2002/0129198). Applicant respectfully traverses these rejections.

Claims 1-23

Applicant's Claim 1 recites:

A content addressable memory (CAM) device for comparing a search key to data values stored therein, comprising:

a plurality of CAM blocks, each CAM block including an array of CAM cells divided into a plurality of segments, each array segment for storing a number of data values that are assigned the same priority; and

a plurality of block priority circuits, each having inputs to receive match signals from a corresponding CAM block, outputs to generate a block index and the priority of a matching data value, and an address table for storing address information for each array segment in the corresponding CAM block.

Nataraj fails to disclose or suggest the CAM device of Applicant's Claim 1.

Nataraj does not disclose or suggest a plurality of block priority circuits, each having "an address table for storing address information for each array segment in the

corresponding CAM block CAM," as recited in Applicant's Claim 1.

The Office Action seems to equate Nataraj's priority index table 6003 with the recitation of the "address table" in Applicant's Claim 1.¹ However, the referenced priority index table 6003 in Nataraj stores a priority number for each of the rows in Nataraj's CAM array to indicate the priorities of data stored in the array (see Nataraj's paragraphs [0167] and [361]); Nataraj's priority index table does not store address information for each array segment in the corresponding CAM block, as recited in Applicant's Claim 1.

Therefore, because Nataraj fails to disclose or suggest that the CAM device includes a plurality of block priority circuits, each having "an address table for storing address information for each array segment in the corresponding CAM block CAM," as recited in Applicant's Claim 1, Claim 1 is patentable over Nataraj. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of Claim 1.

Claims 2-23 depend from Claim 1 and therefore distinguish over the cited references for at least the same reasons as Claim 1.

Claims 24-35

Applicant's Claim 24 recites:

A content addressable memory (CAM) device having a plurality of CAM blocks, each comprising:

an array of CAM cells divided into a plurality of segments, each array segment for storing a number of data values that are assigned the same priority;

means for generating a row index of a highest priority matching value;

means for storing address information for each array segment; and

means for comparing the row index with the address information to determine which priority the highest priority matching data value is assigned, wherein each CAM block is assigned to store a unique range of data values.

As discussed above with respect to Claim 1, Nataraj fails to disclose or suggest

¹ The Office Action states: "Table stores all addresses thus there must be an address range for each array segment (paragraph 361)."

"means for storing address information for each array segment," as recited in Applicant's Claim 24, and therefore Claim 24 is patentable over Nataraj. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of Claim 24.

Claims 25-35 depend from Claim 24 and therefore distinguish over the cited references for at least the same reasons as Claim 24.

Claims 36-39

Applicant's Claim 36 recites:

A method of operating a content addressable memory (CAM) device having an array of CAM cells divided into a plurality of array segments, comprising:

assigning a different priority to each of the array segments;
storing address information for each array segment;
generating a row index of a highest priority matching data value stored in the array; and

comparing the row index with the address information to determine the priority of the highest priority matching data value.

As discussed above with respect to Claim 1, Nataraj fails to disclose or suggest "means for storing address information for each array segment," and thus fails to disclose or suggest "storing address information for each array segment," as recited in Applicant's Claim 36.

Further, there is no language in Nataraj that discloses "comparing the row index with the address information to determine the priority of the highest priority matching data value," as recited in Claim 36.

The Office Action seems to equate Nataraj's MUX 5905 with the recitation of "comparing the row index with the address information to determine the priority of the highest priority matching data value" in Applicant's Claim 36. However, the referenced MUX 5905 in Nataraj "selects and outputs one of the segment addresses PSA1-PSAY associated with the row of CAM cells at row address PRA" (see Nataraj at paragraph [0348]). Thus, Nataraj's MUX 5905 does not compare the row address with the address information, as recited in Applicant's Claim 36, but rather selects one of the

segment addresses for output.

Therefore, because Nataraj fails to disclose or suggest “storing address information for each array segment” and “comparing the row index with the address information to determine the priority of the highest priority matching data value,” as recited in Claim 36, Claim 36 is patentable over Nataraj. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of Claim 36.

Claims 37-39 depend from Claim 36 and therefore distinguish over the cited references for at least the same reasons as Claim 36.

Claims 40-41

Applicant’s Claim 40 recites:

A method of operating a content addressable memory (CAM) device having an array of CAM cells divided into a plurality of array segments, comprising:
assigning a different priority to each of the array segments;
storing address information for each array segment;
generating a segment match flag and a row index of a matching data value stored in each array segment; and
comparing the row indexes with the address information to determine the priorities of the matching data values.

As discussed above with respect to Claim 36, Nataraj fails to disclose or suggest “storing address information for each array segment” and “comparing the row indexes with the address information to determine the priorities of the matching data values,” as recited in Claim 40, and thus Claim 40 is patentable over Nataraj. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of Claim 40.

Claim 41 depends from Claim 40 and therefore distinguishes over the cited references for at least the same reasons as Claim 40.

Claim Rejections under 35 USC §103 in view of Sherman

Claim 3 is rejected under 35 USC §103(a) as being obvious over Nataraj in view of Sherman (USP 6,389,507). Applicant respectfully traverses this rejection.

As discussed above, Claim 3 depends from independent Claim 1, and therefore distinguishes over the cited references for at least the same reasons as Claim 1.

Claim Rejections under 35 USC §103 in view of Stormon

Claims 35 and 37-39 are rejected under 35 USC §103(a) as being obvious over Nataraj in view of Stormon (USP 5,649,149). Applicant respectfully traverses these rejections.

As discussed above, Claim 35 depends from independent Claim 24, and therefore distinguishes over the cited references for at least the same reasons as Claim 24.

As discussed above, Claims 37-39 depend from independent Claim 36, and therefore distinguish over the cited references for at least the same reasons as Claim 36.

CONCLUSION

In light of the above remarks, it is believed that Claims 1-41 are in condition for allowance and, therefore, a Notice of Allowance of 1-41 is respectfully requested. If the Examiner's next action is other than allowance as requested, the Examiner is requested to call the undersigned at (415) 379-6143.

Respectfully submitted,



August 15, 2006

William L Paradice III
Patent Attorney
Reg. No. 38,990

I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450, on August 15, 2006.

William L Paradice III

Name



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